

ABSTRACT

A wave gear device (1), wherein when a wave generator (4) is in a low speed rotating state, a rolling bearing state is formed by a wave bearing (43) and the wave generator (4) and a flexible external gear (3) are held in a relatively rotatable state and when the wave generator (4) is in a high speed rotating state, partition pieces (7) and split side plate pieces (8) forming the retainer (47) of the web bearing (43) are displaced to the outside to stop the rotation of balls (46) in their axes and the revolution thereof. Accordingly, a sliding bearing state is formed by lubricating oil film (9) formed between the wave generator (4) and the flexible external gear (3) and the wave generator and the flexible external gear are held in a relatively rotatable state. When the wave generator (4) returns to the low speed state, the constraint of the wave bearing (43) is released by the elastic return force of the elastic ring (5) of the retainer (47) and the wave bearing (43) returns to the rolling bearing state. Since a rolling fatigue does not occur on the wave bearing (43) in high speed rotation, the wave gear device allowing the input of the high speed rotation therein can be realized.